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(54) Self-cleaning Filter

(57) A self-cleaning filter comprises a cylindrical or conical strainer (2) built into a pipeline (1). An outlet pipe (3) for solid substances deposited on the inner side of the strainer is coupled to

the downstream end of the strainer, and a body (4) is located in the strainer at a relatively short distance therefrom and constrains the liquid to flow at a relatively high and uniform velocity along the inner side of the strainer (2). In this manner an efficient continuous washing of the entire inner side of the strainer is obtained without the need for intermittent operation. The liquid containing solid substances and discharged through pipe (3) is recirculated.

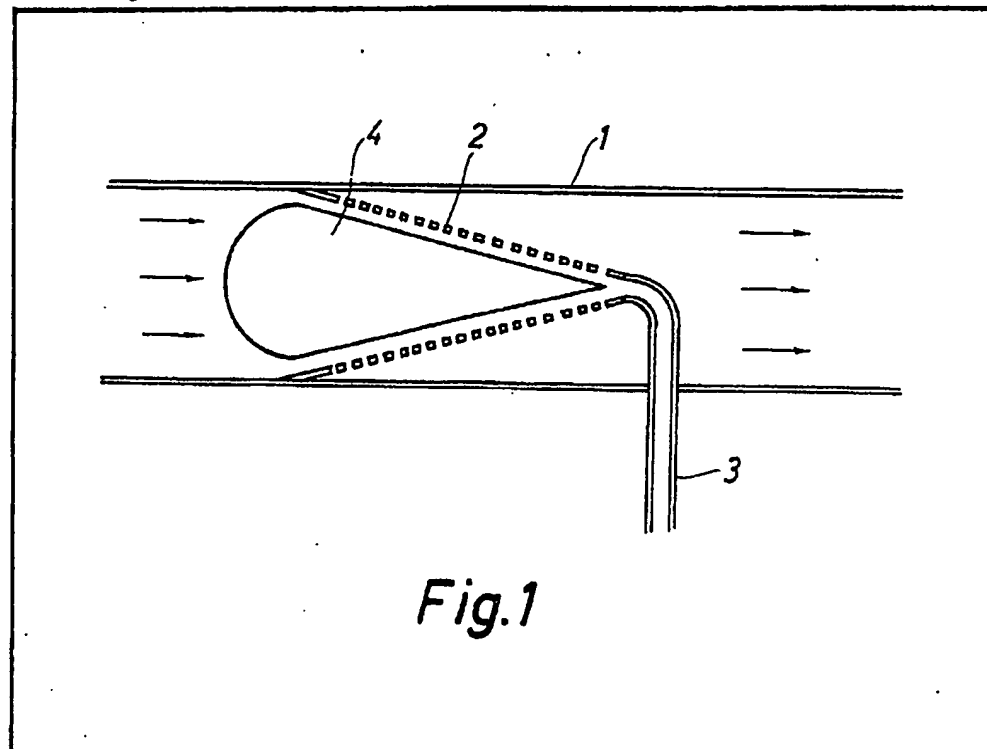
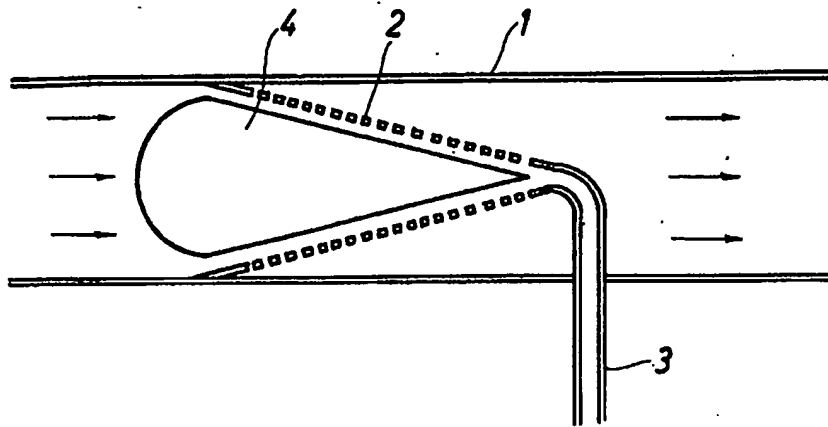
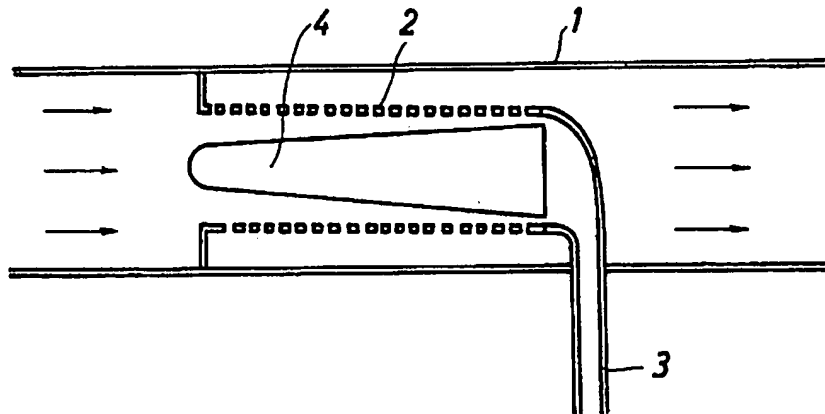


Fig.1

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*Fig. 1**Fig. 2*

# SPECIFICATION A Self-Purifying Filter

The invention relates to an automatic, self-purifying filter with a continuous recirculation and comprising a filtering device including an optionally cylindrical or conical strainer built into a pipeline, the end of said strainer being located in the flow direction and coupled to a draining off pipe for solid substances deposited on the inner side of said strainer, whereby a sprinkler is located in the strainer.

Danish patent specification No. 141,614 discloses an automatic, self-purifying filter with a continuous recirculation. This filter is, however, relatively comprehensive.

Furthermore, Danish patent specification No. 141,315 discloses a filtering device comprising a strainer built into a pipeline and conically tapered in the flow direction. A draining off pipe for solid substances deposited on the inner side of the strainer is coupled to the tapered end of the strainer. A closing valve situated in the interior of the strainer impiles whirling flows behind the valve, said whirling flows providing a more efficient washing of the inner side of the strainer. This filtering device is, however, adapted to intermittent operation.

The object of the invention is to provide a simple filtering device capable of being driven continuously. The filter according to the invention is characterised by the strainer being formed and located in such a manner that the solution in question passes close by the inner side of the strainer at a substantially constant velocity of flow.

The distance between the strainer and the sprinkler is preferably 1—10 mm.

According to a particularly preferred embodiment, the distance decreases substantially linearly in the flow direction in such a manner that the washing effect is substantially constant. In this manner a more efficient utilization of the entire inner side of the strainer is obtained.

The invention will be described below with reference to the accompanying drawing, in which:—

Figure 1 illustrates a self-purifying filter according to the invention, and

Fig. 1 illustrates an alternative embodiment of the filter.

The self-purifying filter illustrated in Fig. 1 with a continuous recirculation comprises a filtering device including a strainer 2 built into a pipeline 1. This strainer is conically tapered in the flow direction, and a draining off pipe 3 for solid substances deposited on the inner side of the strainer 2 is coupled to said tapered end. According to the invention, a sprinkler 4 is located in the strainer 2 at a relatively short distance therefrom and preferably shaped in a similar manner. This sprinkler ensures that the solution or the suspension passes close by the inner side of the strainer 2 and washes off impurities therefrom. The amount of liquid not penetrated

the strainer 2 is then carried to the respective container through the pipe 3 and subsequently recirculated. The filter which may be continuously driven, may for instance be adapted to supply 200—300 l of filtered liquid per minute.

According to an alternative embodiment, cf. Fig. 2, the distance between the strainer 2 and the sprinkler 4 decreases substantially linearly in the flow direction, from 5 to 1 mm. The velocity of flow and the washing effect are thereby substantially the same along the entire inner side of the strainer, since the liquid pressed out through the strainer is compensated for. In this manner a better utilization of the strainer is obtained.

The filter may for instance be of a diameter of 50 mm and a length of 150 mm.

A particular advantage by the filter according to the invention is that the inner side of the strainer is efficiently utilized, and that you need not worry about cleaning in spite of continuous operation. This is of particular importance in connection with agricultural machinery since no particularly skilled persons are necessary for the operation of said machinery. The contents of the container must only be replaced after each use. The spray fluids which for instance may be sprayed from a spreading bar on a tractor, may for instance be weed controlling or insecticidal agents.

The sprinkler 4 is preferably rounded in front.

The sprinkler and the strainer are not limited to the above embodiments, but may be varied in many ways without deviating from the scope of the invention. The sprinkler and the strainer may for instance be shaped in such a manner that a more bent passage is obtained.

According to an alternative embodiment, it is the cleaned liquid that is carried out of the pipeline.

The strainer need not be cylindrical or conical but may for instance be cornered.

## Claims

1. An automatic, self-purifying filter with a continuous recirculation and comprising a filtering device including an optionally cylindrical or conical strainer built into a pipeline, the end of said strainer being located in the flow direction and coupled to a draining off pipe for solid substances deposited on the inner side of said strainer, whereby a sprinkler is located in the strainer, characterised by the strainer being formed and located in such a manner that the solution in question passes close by the inner side of the strainer at a substantially constant velocity of flow.

2. A filter as claimed in claim 1, characterised by a distance of 1—10 mm between the sprinkler and the strainer.

3. A filter as claimed in claim 1 or 2, characterised by the distance decreasing substantially linearly in the flow direction in such a manner that the washing effect is constant.

4. A filter as claimed in claims 1—3,

characterised by the sprinkler being rounded in front.

substantially as described above and with reference to the accompanying drawing.

5. An automatic, self-purifying filter

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